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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,925	12/15/2005	Arild Figenschou	MNL-2810-41	4077

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901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

MAYO III, WILLIAM H

ART UNIT	PAPER NUMBER
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2831

MAIL DATE	DELIVERY MODE
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03/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,925	Applicant(s) FIGENSCHOU ET AL.	
	Examiner William H. Mayo III	Art Unit 2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings were received on January 14, 2008. These drawings are approved.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because in line 4, the abstract also states the term "comprises", which is improper claim language for the abstract. The applicant should replace the terms "comprises", with the terms – has—to provide the abstract with proper language. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haug et al (Pat Num 5,813,106, herein referred to as Haug) in view of Haxton (Pat Num 5,902,106). Haug discloses a marine, flexible, integrated umbilical (Figs 1-12) capable of transporting hydraulic fluids, chemicals, electrical and optical signals (Col 1, lines 44-55). Specifically, with respect to claim 1, Haug discloses an umbilical (Fig 6) comprising a number of fluid pipes (7) and electrical conductors (8), filler material (6 & 9) comprising several inner and outer channel elements (6 & 9) being twisted about the longitudinal axis of the

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umbilical (Fig 6) and assembled such that they form channels (Fig 6) for the receipt of the fluid pipes (7) and the electrical conductors (8, Col 2, lines 28-40), wherein the pipes (7) and the conductors (8) being axially free movable within the channels (Col 4, lines 33-38), and an outer sheathing (1) of suitable material.

With respect to claim 7, Haug discloses that the umbilical (Fig 6) further comprises a plurality of electrical conductors (8), wherein the filler material (6 & 9) is disposed between the fluid flow pipes (7) and the electrical conductors (8) and form channels (Fig 6) for the receipt of the fluid pipes (7) and the electrical conductors (8, Col 2, lines 28-40), wherein the pipes (7) and the conductors (8) being axially free movable within the channels (Col 4, lines 33-38), and an outer sheathing (1) of suitable material.

However, Haug doesn't disclose the umbilical comprising an armoring and weight adding band being wrapped around the filler material and being laid between the filler material and the outer sheath (claim 1), nor the armoring and weight adding band being made of a metallic material (claim 2), nor the armoring and weight adding band being cross laid around the filler material (claims 3 & 8), nor the armoring and weight adding band having a width of 40-60mm and a thickness of 0.6-1.0mm (claims 4 & 9), nor the armoring and weight adding band being made of a band of steel (claim 5), nor the armoring and weight adding band being laid around the filler material in several layers (claim 6).

Haxton teaches a marine, flexible, integrated umbilical (Figs 2-3) capable of transporting hydraulic fluids, chemicals, electrical and optical signals (Col 1, lines 30-52), wherein the umbilical (101) achieves good flexural properties and has a

degree of protection against external forces (Col 2, lines 25-34). Specifically, with respect to claim 1, Haxton discloses an umbilical (101) comprising a number of fluid pipes (9) and electrical conductors (8), filler material (10) being twisted about the longitudinal axis of the umbilical (101, Col 2, lines 25-34) and assembled such that they form channels (Fig 2) for the receipt of the fluid pipes (9) and the electrical conductors (8, Col 2, lines 25-34), and an outer sheathing (113) of suitable material, wherein an armoring and weight adding band (112) is wrapped around the filler material (10) along the entire length so as to be laid between the filler material (10) and the outer sheath (113, Fig 2) in the finished umbilical along an entire length of the umbilical (Fig 2). With respect to claims 2 & 5, Haxton teaches that the armoring and weight-adding band (112) is made of a metallic material, such as a band of steel (Col 2, lines 40-44). With respect to claims 3, 6, & 8, Haxton discloses that the armoring and weight-adding band (112) may be cross-laid around the filler material (10) and optionally in several layers (112a & 112b, Col 5, lines 13-17). With respect to claims 4 & 9, Haxton teaches that the armoring and weight-adding band (112) has a width and a thickness of 5 mm (Col 2, line 46).

1. With respect to claims 1-3 and 5-8, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the umbilical of Haug to comprise the armoring and weight adding band configuration along the length of the entire cable as taught by Haxton because Haxton teaches that such a configuration provides an umbilical that achieves good flexural properties and has a degree of protection against external forces

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(Col 2, lines 25-34) and providing such a layer along an entire length of the Haug cable would provide such properties along the entire length of the cable and since such a modification would have been an obvious matter of design choice to and it appears that modified Haug would perform equally well with the modification.

With respect to claims 4 & 9, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the umbilical of Haug to the armoring and weight adding band having a width of 40-60mm and a thickness of 0.6-1.0mm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233, since the applicant has not disclosed that such a modification solves any stated problems or is for any particular purpose and it appears that Haug would perform equally well with or without the modification.

Response to Arguments

7. Applicant's arguments filed January 14, 2008 have been fully considered but they are somewhat persuasive. Specifically, the applicant argues the following:

- A) Haxton discloses that the helically wound layers of steel are only placed at the dynamic section and therefore doesn't teach the armoring layer being disposed along an entire length of the cable.

- B) Haxton is not concerned with weighting of the cable and therefore has a different reason for employing the steel bands and in light of such it would not have been obvious to combine the teachings of Haxton and Haug.

With respect to arguments A & B, the examiner respectfully traverses.

Firstly, it appears that the applicant has misconstrued the passage at column 2, line 38. Specifically, while Column 2, line 38 states that such a layer may be applied to a section of the cable, clearly Haxton, teaches that the entire cable can comprise the additional layers by stating:

The present umbilical is suitable for both static and dynamic applications. The design is based on experience from earlier work with both flexible and rigid tubes.

The Haxton reference goes on to state if the umbilical cable is utilized in a dynamic application, that the armoring layers may be applied for a desired dynamic length of the cable (see claim 6). It is understood in the art of umbilical cables, that static lengths of the cable are the sections which are not submerged in water, such as the short length of the cable attached to the reel on the boat and dynamic sections of the cable are the sections which are subject to stresses and pressures, such as the part of the cable that is submerged in the water, and subject to the stresses of water as the cable is being pulled behind a boat. It is clearly understood in the art, that such a length of the cable, constitutes most of the umbilical cable, and that such dynamic lengths are based solely on the desires of the engineer designing the cable for specific applications.

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In light of the above comments, it is respectfully submitted that the 35 USC 103(a) rejection is proper and just.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is Ekeberg et al (Pat Num 6,943,300), which disclose various umbilicals.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Communication

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (571)-272-1978. The examiner can normally be reached on M-F 8:30am-6:00 pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F.F. Gutierrez can be reached on (571) 272-2245 or (571) 272-2800 ext 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William H. Mayo III/

William H. Mayo III
Primary Examiner
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WHM III

March 13, 2008